

ECTOPARASITES OF MAMMALS FROM OREGON

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Ectoparasites from 451 small mammals were collected while making an ecological study in the Steen's Mountains area in Harney County, Oregon. The mammals were captured in snap-traps, and individuals of the same species were placed in plastic bags and etherized to kill their ectoparasites. The bags and carcasses were then examined for invertebrates. Ectoparasites were placed in small vials containing 70 per cent ethyl alcohol and labeled as to place, date, collector, and host. The mammals and number examined are listed below.

- Sorex preblei* Jackson, 1
- Sorex vagrans monticola* Merriam, 8
- Sorex palustris navigator* (Baird), 6
- Myotis lucifugus carissima* Thomas, 2
- Myotis volans interior* Miller, 3
- Lasionycteris noctivagans* (Le Conte), 1
- Antrozous pallidus cantwelli* Bailey, 12
- Mustela frenata nevadensis* Hall, 2
- Citellus beldingi crebrus* Hall, 3
- Citellus leucurus leucurus* (Merriam), 3
- Citellus lateralis trepidus* (Taylor), 3
- Eutamias minimus scrutator* Hall and Hatfield, 1
- Eutamias* (*amoenus* and/or *minimus*), 23
- Thomomys talpoides quadratus* Merriam, 3
- Perognathus parvus parvus* (Peale), 6
- Dipodomys ordii columbianus* (Merriam), 24
- Dipodomys microps preblei* (Goldman), 1
- Onychomys leucogaster fuscogriseus* Anthony, 11
- Peromyscus maniculatus sonoriensis* (Le Conte), 211
- Neotoma lepida nevadensis* Taylor, 5
- Neotoma cinerea alticola* Hooper, 4
- ♂ *Microtus montanus montanus* (Peale), 53
- Microtus longicaudus mordax* (Merriam), 46
- Lagurus curtatus pauperrimus* (Cooper), 11
- Zapus princeps major* Preble, 6
- Ochotona princeps taylori* Grinnell, 1
- Sylvilagus nuttalli nuttalli* (Bachman), 1

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nick, and A. Stone of the Insect Identification and Parasite Introduction Section of the United States Department of Agriculture; and by F. C. Bishopp and R. I. Sailer of the Oscar Johnston Cotton Foundation at Brownsville, Texas. Mounted and unmounted specimens of the parasites are housed in the United States National Museum and the Oregon State University entomological museum.

Identification of the hosts was made by the author in the field at the time of collection. Consequently, separation of the two species of *Eutamias* was not attempted where their ranges overlapped, and these are referred to in the tables as *Eutamias* sp.

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Tables 1 to 5 present the species and numbers of individuals of each parasite and their host relationships. When only the genus, family or order are given, the parasite represented an undetermined species, or a specialist was not available to make specific identifications of that particular organism.

DISCUSSION

Analysis of the tables reveals several interesting host-parasite relationships. Mice of *Microtus montanus* possessed the greatest number of species of mites of any mammal studied. These mice also were next in frequency to deer mice, *Peromyscus maniculatus*, with reference to the numbers of species of fleas they possessed. Although more hosts of these two species were examined than other mammals, sufficient numbers of some of the others were taken to be indicative of their parasite fauna.

Most parasites were not widely distributed in relationship to host species, and when found on more than one or two hosts usually were found only in small numbers. A few, however, were widely distributed and in some abundance. These were the mites *Haemogamasus ambulans* and *Haemolaelaps glasgowi*, tick *Dermacentor andersoni*, and fleas *Catallagia decipiens*, *Megabothris abantis*, *Meringis hubbardi*, and *Monopsyllus wagneri*.

Table 1. Host relationships and numbers of mites from mammals of Harney County, Oregon.

MITE	Host															
	<i>Antrozous pallidus</i>	<i>Eutamias</i> sp.	<i>Lagurus curtatus</i>	<i>Lasionycteris noctivagans</i>	<i>Microtus longicaudus</i>	<i>Microtus montanus</i>	<i>Myotis lucifugus</i>	<i>Neotoma lepida</i>	<i>Onychomys leucogaster</i>	<i>Perognathus parvus</i>	<i>Peromyscus maniculatus</i>	<i>Sorex palustris</i>	<i>Sorex preblei</i>	<i>Sorex vagrans</i>	<i>Thomomys talpoides</i>	<i>Zapus princeps</i>
<i>Balaustium</i> sp.						1										
<i>Bdella</i> sp.		1														
<i>Dermacarus</i> sp.						1										
<i>Erythres</i> sp.						1										
<i>Eubrachylaelaps crowei</i>						1		1								
<i>Eulaelaps stabularis</i>						3				1						
<i>Haemogamasus ambulans</i>		2		3	3			27		3			2	6	1	
<i>Haemogamasus liponyssoides</i>				1	1											
<i>Haemogamasus mandschuricus</i>								1								
<i>Haemogamasus pontiger</i>								4								
<i>Haemolaelaps (prob.) casalis</i>						1	1	1								
<i>Haemolaelaps glasgowi</i>	1	9	10	24				4	11	13	1	1	1			
<i>Hirstionyssus arcuatus</i>										1						
<i>Hirstionyssus isabellinus</i>				1	1									1		
<i>Hirstionyssus obsoletus</i>										1						
<i>Hirstionyssus</i> sp.				1	1			4		1						
<i>Ischoronyssus</i> sp.			1			1										
<i>Laelaps alaskensis</i>		1			3			1								
<i>Laelaps pachypus</i>				3	21											
<i>Leptus</i> sp.					1											
<i>Macrocheles</i> sp.	1			1	1				1	2						
<i>Parasitus</i> sp.				1	2		1						1			

Table 1 continued.

<i>Poecilochirus</i> sp.	1	1	1	
<i>Pygmephorus</i> sp.			1	
<i>Resinacarus</i> sp.		1		
<i>Spinturnix</i> (prob.) <i>americanus</i>		1		
<i>Spinturnix</i> sp.	1			
Phytoseiidae sp.			1	
Trombiculidae sp.	1	1		2
Unknown			2	

Table 2. Host relationships and numbers of ticks from mammals of Harney County, Oregon.

HOST	TICK				
	<i>Dermacentor andersoni</i>	<i>Haemaphysalis l.-palustris</i>	<i>Ixodes angustus</i>	<i>I. kingi</i>	<i>I. sp.</i>
<i>Citellus lateralis</i>	16				
<i>Eutamias</i> sp.	11				
<i>Microtus longicaudus</i>	10				
<i>M. montanus</i>	30				
<i>Neotoma cinerea</i>	5		14		
<i>N. lepida</i>	1				
<i>Onychomys leucogaster</i>				1	
<i>Perognathus parvus</i>	8				
<i>Peromyscus maniculatus</i>	51				4
<i>Sorex palustris</i>	1				
<i>S. vagrans</i>					6
<i>Sylvilagus nuttallii</i>	4	22			

Table 3. Host relationships and numbers of lice from mammals of Harney County, Oregon.

LOUSE	Host										
	<i>Dipodomys ordii</i>	<i>Eutamias</i> sp.	<i>Microtus longicaudus</i>	<i>M. montanus</i>	<i>Myotis lucifugus</i>	<i>Neotoma cinerea</i>	<i>N. lepida</i>	<i>Perognathus parvus</i>	<i>Peromyscus maniculatus</i>	<i>Sorex palustris</i>	<i>Thomomys talpoides</i>
Anoplura											
<i>Fahrenholzia pinnata</i>	1							37			
<i>Hoplopleura acanthopus</i>			52	37	1				2		
<i>H. arboricola</i>		5									
<i>H. (prob.) erratica</i>		2									
<i>H. hesperomydis</i>									35		
<i>Neohaematopinus inornatus</i>						11	2				
<i>N. pacificus</i>		5									
<i>Polyplax (prob.) abscinssa</i>				4							
<i>P. auricularis</i>								43	3		
<i>P. spinulosa</i>				1							
Mallophaga											
<i>Geomydoecus thomomys</i>											7
<i>Strigiphilus ceblebrachys</i>								1			

Table 4. Host relationships and numbers of bedbugs and biting flies from mammals of Harney County, Oregon.

PARASITE	Host			
	<i>Antrozous pallidus</i>	<i>Microtus longicaudus</i>	<i>Myotis lucifugus</i>	<i>M. volans</i>
Hemiptera				
<i>Cimex piloselis</i>				1
Diptera				
<i>Basilia forcipata</i>			9	2
<i>B. antrozoi</i>	9			
<i>Simulium aureum</i>		1		

Table 5. Host relationships and numbers of fleas from mammals of Harney County, Oregon.

FLEA	Host						
<i>Callistopsyllus terinus</i>							
<i>Catallagia decipiens</i>							
<i>Corrodopsylla curvata</i>							
<i>Foxella ignota</i>							
<i>Hoplopsyllus anomalus</i>							15
<i>Hystrihopsylla dippiei</i>							
<i>H. schefferi</i>							1
<i>Malariaeus euphorbi</i>							
<i>M. telchinum</i>							
	<i>Citellus beltingi</i>						
	<i>C. lateralis</i>						
	<i>C. leucurus</i>						
	<i>Dipodomys microps</i>						
	<i>D. ordii</i>						
	<i>Eutamias minimus</i>						
	<i>E. sp.</i>						
	<i>Lagurus curtatus</i>	5	7	24			
	<i>Microtus longicaudus</i>			1			
	<i>M. montanus</i>						
	<i>Mustela frenata</i>						
	<i>Neotoma cinerea</i>						
	<i>N. lepida</i>						
	<i>Ochotona princeps</i>						
	<i>Oryzomys leucogaster</i>				7		
	<i>Perognathus parvus</i>						
	<i>Peromyscus maniculatus</i>	4					
	<i>Sorex palustris</i>						
	<i>S. preblei</i>						
	<i>S. vagrans</i>						5
	<i>Thomomys talpoides</i>						
	<i>Zapus princeps</i>						

